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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,711	12/30/2003	Martin Brox	1890-0030	2105

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EXAMINER	
LUU, AN T	
ART UNIT	**PAPER NUMBER**
2816	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,711	BROX ET AL.	
	Examiner	Art Unit	
	An T. Luu	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15,16,19-22,25,26,28 and 34-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,16,19-22,25,26,28 and 34-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's Amendment filed on 12-26-06 has been received and entered in the case. The rejections set forth in the previous Office Action are maintained as indicated below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15, 19-22, 25-26, 34 and 36-38, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over the Miyamoto reference (US Patent 6,586,978) in view of the Dortu et reference (US Patent 6,229,364).

Miyamoto discloses in figure 10 an apparatus comprising a delay device comprising a first delay element 403 and a second delay element 402, wherein the first delay element is configured to generate a first output D responsive to a control signal (output of 407) and a first input C, and wherein the second delay element is configured to generate the first input responsive to the externally generated clock signal CLK and a set signal (output of 405) related to the frequency of the externally generated clock signal, a feedback device (404, 406) operably connected to the first delay element and configured to generate a time delayed first output B, the feedback device operable to delay the first output by an amount substantially equal to a receiver time delay d2 plus a driver time delay d1, a phase difference detection 407 device configured to generate signal responsive to the phase difference between the time delayed first output and the

externally generated clock signal, and a frequency detection 405 unit configured to generate the set signal responsive to the frequency of the externally generated clock signal as required by claim 15. As to amendment portion of claim 15, figure 12 of Miyamoto discloses details of the second delay element 402 including different second delay elements (i.e., 412s) in discrete steps (i.e., delayed signal tapped out at each delay unit, pair of inverters) for different frequency ranges, at least one second delay element (i.e., delay unit providing the fourth output) being for low frequencies (i.e., long delay) of the externally generated clock signal and at least one further second delay element (i.e., delay unit providing the first output) being for high frequencies (i.e., short delay) of the externally generated clock signal; and the limitation "*wherein the second delay element for low frequencies and the further second delay element for high frequencies are switched over for different frequency ranges of the externally generated clock signal*" is seen as operation function of a variable delay section in which output of the detection circuit is for adjusting delay element of the second delay as a function of the frequency of the first input CLK, col. 15, lines 34-38 and col. 16, lines 24-26.

Miyamoto does not disclose the second delay element comprises a low frequency delay element for lower frequencies of the externally generated clock signal and a high frequency delay element for higher frequencies of the externally generated clock signal, wherein the low frequency delay element and the high frequency delay element are configured for operation at different frequency ranges of the externally generated clock signal.

Dortu discloses in figure 9 and associated description a delay circuit 400 permitting delaying both low and high frequency ranges of an externally generated clock signal IN. It is noted that the limitation "wherein the low frequency delay element and the high frequency delay

element are configured for operation at different frequency ranges of the externally generated clock signal" is seen as operational characteristic and/or result derived from the above delay circuit.

It would have been obvious to one skilled in the art at the time the invention was made to replace a Miyamoto's delay circuit with a delay circuit taught by Dortu since Dortu's delay circuit would improve operational frequency ranges in Miyamoto's invention.

As to claim 19, figure 5 discloses the delay device comprising a controllable variable capacitor element (i.e., 54a controlled by 53a).

As to claims 20 and 21, figure 3 discloses the delay device comprising a controllably variable current inverter 31 and 32. It is noted that inverters 1 and 32 are in chain connection.

As to claims 22 and 25-26, they are rejected for reciting a method derived from the apparatus of claim 15 which is rejected as noted above.

As to claim 34, figure 10 shows the frequency detection unit 405 is operable to generate the set signal independent of the first output signal.

As to claims 36-38, the scopes of these claims are similar to that of claims 19-21. Therefore, they are rejected for the same reason set forth above.

3. Claims 16, 28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Miyamoto reference (US Patent 6,586,978) in view of the Dortu et reference (US Patent 6,229,364) and further in view of the Li et al reference (US Patent 6,208,183).

The combination of Miyamoto and Dortu discloses a delay locked loop comprising all the claimed invention except for teaching a filter circuit coupled between the phase detector and the delay element as required by claim 16.

Li discloses in figure 2 a delay locked loop 100 comprising a filter circuit 106 coupled between the phase detector 102 and the delay element 110 as required by the claim.

It would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of filter in Li into the combination of Miyamoto and Dortu since the filter would remove out-of-band and/or interfering signals.

As to claims 28 and 35, the scopes of these claims are similar to that of claim 16. Therefore, they are rejected for the same reason set fort above.

Response to Arguments

Applicant's arguments filed 12-26-07 have been fully considered but they are not persuasive.

Applicant has argued that Miyamoto's teachings do not disclose second delay elements and Dortu's teachings do not disclose the use of different delay elements for different frequencies and concluded that a prima facie case of obviousness has not been established. Examiner respectfully disagrees since Miyamoto disclose in col. 15, lines 35-45 that delay 402 is adapted to operate in high and low frequency input signals. Miyamoto discloses the same delay elements whose time delay is controlled to accommodate both low and high frequency input signals. Dortu also discloses a delay capable of receiving both low and high frequency input signals (col. 6, line 8-16) and Dortu's delay circuit comprises different delay elements for low

and high frequencies (e.g., selecting different set of pair inverters 408 for different frequencies). Replacing a generic device with a specific configured device, wherein both are functionally equivalent, is seen as routine for one skilled in the art. In addition, Examiner has provided a motivation to combine prior art. Therefore, the rejections of claim still stand.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

An T. Luu
1-31-07

TIMOTHY P. CALLAHAN
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